VAPOR GROWTH APPARATUS

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Abstract

PURPOSE:To alternately perform an ALE and a VPE without exposing a substrate with the atmosphere and without cooling it to the ambient temperature by narrowing between an inner wall of a reaction tube and the substrate on an ALP executing region, extending it on a VPE executing region, and optimizing material gas flowing speeds on the regions.
CONSTITUTION:One reaction tube 1 is defined on an ALF optimized region and a VPE optimized region, a substrate 8 is moved to the regions by a susceptor 7, and a compound semiconductor layer of a molecular layer and an atomic layer by a crystalline growth of VPE and an ALF is formed. In this case, the flowing speed of the material gas in the tube 1 is set to a limit value or more for exhibiting a self-limiting effect on the ALE optimized region and to a limit value or less on the VPE optimized region. Thus, a sectional area of the tube 1 is reduced on the ALE optimized region and increased on the VPE optimized region. In this manner, the ALE and the VPE are alternately executed.